

DIRECT TESTIMONY
OF
CAROLINA POWER & LIGHT COMPANY WITNESS
BRENDA E. BRICKHOUSE

SCPSC DOCKET NO. 96-188-E

1 Q. Please state your name and business address.

2 A. My name is Brenda Brickhouse and my business address is 411 Fayetteville Street Mall,
3 Raleigh, North Carolina 27602.

4 Q. What is your experience and current position with CP&L?

5 A. I am a Project Manager in the Transmission Department. I have worked in the
6 Transmission Department at Carolina Power & Light for over 15 years. I have a Bachelor
7 of Science in Forestry and a Master of Public Affairs from North Carolina State
8 University; in both programs, I focused on environmental planning. My experience
9 includes the siting and environmental planning for new facilities and obtaining and
10 ensuring compliance with the environmental permits required for these facilities.

11 Q. Please describe the major utility facility CP&L proposes to build near the City of
12 Florence.

13 A. The proposed 230 kV/23 kV substation initially will have overall fence dimensions of
14 225 feet by 170 feet and ultimately may have overall fence dimensions of 225 feet by 260
15 feet. The fence will have 7-foot-high chain link fabric and three strands of barbed wire
16 for a total height of 8 feet. A 20-foot-wide, 850-foot-long driveway will provide access
17 to the substation from Darlington Street. All disturbed areas outside the substation pad,
18 access road, and ditches will be planted in grass and with approximately 3000 longleaf
19 pine (*Pinus palustris*) seedlings and 200 wax myrtle shrubs (*Myrica cerifera*).

1 The seedlings will be planted randomly 7 to 10 feet on center. The shrubs, 3 gallon size,
2 will be spaced 10 feet apart. The galvanized steel structures will consist of tapered
3 tubular poles for the high voltage bus with maximum heights of approximately 51 feet
4 and 8-inch-square tubes for the low voltage buses with maximum heights of
5 approximately 30 feet. The major equipment will include a 230/23 kV 25 MVA
6 transformer, a 23 kV regulator, 230 kV circuit switcher, three 23 kV circuit breakers, and
7 a 23 kV capacitor bank.

8 The proposed 230 kV transmission line will utilize light-duty steel single-pole structures
9 supporting three 795 kcmil 45/7 ACSR conductors and one 7#7 Alumoweld overhead
10 ground wire. Each conductor will be supported by polymer line post insulators or
11 horizontal-vee insulators in a delta configuration. The structures will average 85-90 feet
12 in height and will be spaced approximately 400-700 feet apart.

13 The right-of-way corridor for this proposed line will be 70 feet wide. All woody
14 vegetation will be cut within this corridor. This will be accomplished by hand cutting
15 using chain saws or similar hand-operated equipment. The debris will be chipped or
16 otherwise cut into smaller pieces with any residue spread and distributed over the
17 corridor. Wet areas will similarly be hand cut. Cut vegetation in these wet areas will be
18 left lying on the right-of-way; any large debris that would impede construction will be
19 moved to the edge of the corridor or pulled out of the wet area to be chipped or otherwise
20 cut into smaller pieces with other debris. Any areas disturbed by the clearing or
21 construction operations will be restored to original contours and seeded. Danger trees, i.e.
22 those trees outside the right-of-way corridor that are tall enough to endanger the line, will

1 be selectively hand cut.

2 Q. Exactly where will it be located?

3 A. Exhibit 1 to my testimony is the Application for a Certificate of Environmental
4 Compatibility and Public Convenience and Necessity filed on June 7, 1996 which
5 complies with all the requirements of S. C. Code Ann. § 58-33-10 et. seq. This exhibit
6 contains a map of Florence showing the location of the proposed transmission line and
7 substation. As you can see from this exhibit, the proposed Florence Cashua 230 kV
8 Substation and approximately 1.3 miles of new 230 kV transmission line will be located
9 in Florence County north and west of Florence. The proposed Florence Cashua 230 kV
10 substation site is located on Darlington Street approximately .7 miles north of the Five
11 Points area in Florence. The proposed Florence Cashua 230 kV Tap Line will connect to
12 the existing Florence - Kingstree 230 kV Line approximately .4 miles east of the
13 Interstate 95 and Sumter Street intersection and proceed approximately 1.3 miles in a
14 southerly direction to the proposed Florence Cashua 230 kV Substation.

15 Q. Why is this the most appropriate location ?

16 A. This location is appropriate for several reasons. The proposed substation is near the
17 commercial/industrial load center in northwest Florence. The new substation is within
18 one mile of at least 35 MVA of existing load. In addition, most of the future spot loads
19 that have been identified are within a one mile radius of the site. The proposed Florence
20 Cashua 230 kV transmission project was located to minimize land use impacts, to be near
21 the load center, and to minimize the distance and impacts of the transmission line and
22 subsequent distribution lines. The proposed transmission line follows a direct route

1 thereby reducing environmental and land use impacts.

2 Q. Please describe the environmental impact of constructing this major utility facility.

3 A. The land where the proposed project will be constructed is primarily agricultural fields.

4 The wooded areas crossed are composed of pine with some mixed hardwood forest. The
5 proposed transmission line corridor crosses one drainage area where the dominant
6 vegetation changes to mixed hardwoods including red maple and sweet gum.

7 Additionally, the proposed line has stream or ditch crossings. The hydrology will not be
8 altered in these areas and no unauthorized fill or discharge will be made in any wetlands.

9 The proposed Florence Cashua 230 kV transmission project will require clearing
10 approximately 4.1 acres of forest. This will result in converting a corridor to an open
11 grass, forb, and low shrub community of native vegetation. The clearing of the corridor
12 will benefit those species that favor an open, disturbed habitat. Many threatened or
13 endangered plants succeed in such areas and may colonize the proposed right-of-way.
14 Carolina Power & Light manages rare, threatened or endangered plants that occur on its
15 power line rights-of-way.

16 Wildlife species found in such habitats include the white-tailed deer, the Eastern
17 cottontail, and the Eastern gray squirrel. Upland game birds in this habitat type include
18 the Northern bobwhite, the American woodcock, and the mourning dove. A diversity of
19 nongame species including songbirds and many species of amphibians and reptiles would
20 also be expected to occur in the area. The proposed right-of-way corridor will benefit
21 those species that prefer a habitat edge such as deer, raccoon, cottontail, dove, quail,
22 treefrogs, etc. The proposed transmission project will not impact any known threatened

1 or endangered species. Fragmentation of habitat is minimal since the project area is
2 experiencing commercial and light industrial development.

3 The proposed Florence Cashua 230 kV transmission project will not impact any known
4 archaeological or historical resources. The South Carolina Department of Archives and
5 History has reviewed this project and noted no properties of architectural, historic, or
6 archaeological significance which would be affected by the proposed transmission line.

7 Currently, most of this area is undeveloped. There are no churches, schools, medical
8 facilities, cemeteries or day care facilities in the immediate area. Previously, it has
9 experienced some logging and agriculture as well as the construction of drainage ditches.

10 The area is experiencing light industrial, commercial and residential development. The
11 line crosses undeveloped land except for an automobile parts recycling business. The
12 substation site is undeveloped.

13 The proposed Florence Cashua 230 kV transmission project will be visible to the general
14 public near road crossings. The substation site will be landscaped using native species
15 similar to the surrounding landscape. Along the proposed route, the proposed
16 transmission line will blend with the surrounding landscape since the structures are made
17 of corten steel (a brown color). Additionally, the single pole structures have a smaller
18 visual impact than H-frame or other typical transmission structures.

19 Q. Has CP&L taken all reasonable steps to minimize the environmental impact of the
20 project?

21 A. Yes, environmental and land use impacts of this project were minimized during the initial
22 siting process. The proposed Florence Cashua 230 kV transmission project was located

1 to minimize land use impacts, to be near the load center, and to minimize the distance and
2 impacts of the transmission line and subsequent distribution lines. The proposed
3 transmission line follows a direct route thereby reducing environmental and land use
4 impacts. The transmission line clearing and construction activities are designed to
5 minimize environmental impacts. The wet areas will be hand cut, and structures will be
6 located outside of these areas as much as practicable. Additionally, the proposed corridor
7 will benefit those plant and animal species that favor an open or edge habitat; this
8 includes some rare, threatened, and endangered plant species found in similar situations
9 along other CP&L power lines.

10 Q. Please describe how CP&L determined the appropriate location for the major utility
11 facility?

12 A. The proposed Florence Cashua 230 kV transmission project was located to minimize
13 environmental impacts, to be near the load center, and to minimize the distance and
14 impacts for the transmission line. CP&L studied the area using aerial photography,
15 USGS topographic maps, field reconnaissance, and input from various agencies.

16 There were three substation sites evaluated before the preferred site was purchased. They
17 were all located near the load center and afforded uncomplicated access to the substation
18 and distribution feeders. Two substation sites on Cashua Drive were evaluated but not
19 pursued due to future land use impacts and poor screening. The selected site was
20 available for purchase, is less visible to the public, and meets the electrical requirements
21 for this project.

22 Four line routes were evaluated in detail. Exhibit 1 contains a map of the alternative line

1 routes considered for this project. A comprehensive evaluation of each route was
2 conducted to determine the best overall location. Many factors were considered including
3 cost, land use impacts, environmental impacts, and electrical system requirements. The
4 proposed transmission line route is not near homes, schools or businesses, affects the
5 fewest number of property owners, and is the least visible to the public. In addition, the
6 proposed route has the least impact on a new school under construction in the study area.

7 Alternative # 2 would cross the property of the new school between the building and its
8 playground; and Alternative #3 would be approximately 700 feet from the school building
9 and 1400 feet from the playground. The proposed route is over 1500 feet from the closest
10 corner of the new school building and over 800 feet from the playground area.

11 Q. Will the proposed major utility facility conform to all applicable State and local laws and
12 regulations?

13 A. Yes. There will be no unauthorized dredged or fill material placed in wetlands. All
14 clearing, construction, and maintenance will be conducted in accordance with the Storm
15 Water Management and Sediment Control Policy and Procedures Manual filed with the
16 Public Service Commission. All work will be accomplished in accordance with the
17 National Pollutant Discharge Elimination System General Permit for Storm Water
18 Discharges administered by the South Carolina Department of Health and Environmental
19 Control.

20 Q. Does this conclude your testimony?

21 A. Yes.